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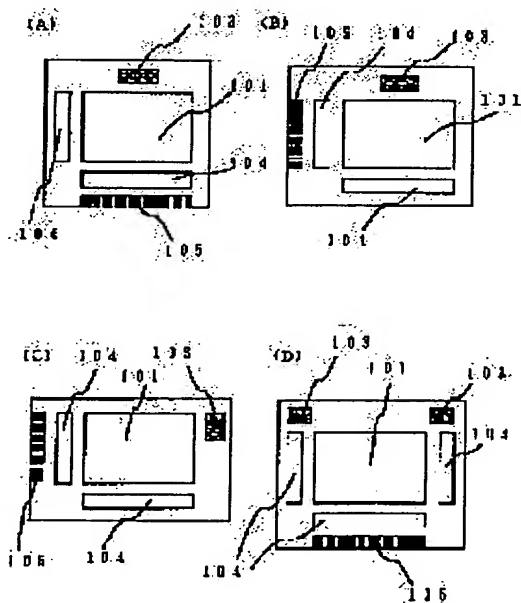
(21)Application number: **09267724** (71)Applicant: **SEMICONDUCTOR ENERGY LAB CO LTD**
(22)Date of filing: **12.09.1997** (72)Inventor: **CHIYOU KOUYUU**
SAKAKURA MASAYUKI

(54) **LIQUID CRYSTAL DISPLAY DEVICE WITH BUILT-IN IMAGE SENSOR**

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an inexpensive liquid crystal display panel having a sensitive sensor part by arranging a peripheral drive circuit in parallel to one side of a liquid crystal display part and arranging the sensor part in parallel to the outer side.

SOLUTION: This display panel is provided with a sensor part 103 consisting of a photoelectric conversion element, a liquid crystal display part 101 consisting of a thin film transistor and a peripheral drive circuit 104 for driving the liquid crystal display part 101. Then, the peripheral drive circuit 104 is arranged in parallel to one side of the liquid crystal display part and the sensor part 103 is arranged in parallel to the other one side. That is, by such a constitution, the sensor part 103 is provided on a place without the peripheral drive circuit 104 and a lead-out terminal part 105 is provided on the opposite side holding the liquid crystal display part 101. By such a manner, an excellent image is read without being affected by noise, heat generation from the peripheral drive circuit 104 and static electricity, etc., easy to occur on the lead-out terminal part 105.



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(21)Application number: 07314321 (71)Applicant: YAZAKI CORP

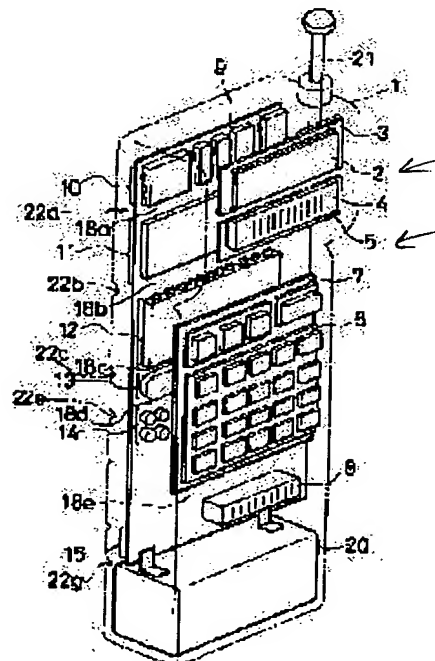
(22)Date of filing: 01.12.1995 (72)Inventor: IINO TADASHI

(54) PORTABLE ELECTRONIC EQUIPMENT

(57)Abstract:

PROBLEM TO BE SOLVED: To obtain the freely flexible portable electronic equipment by mounting an electronic circuit section controlling each of a key section, a display section, a sound reception section, a sounding section and a flexible antenna onto a board made of a flexible material at a prescribed interval.

SOLUTION: A display board 3 with an LCD 2 mounted thereon, a speaker board 5 with a speaker 4 mounted thereon, a key pad board 7 with an operation key pad 6 mounted thereon and a flexible major printed circuit board 9 with a microphone 8 and major electronic components mounted thereon are integrated with a case 1. The operation key pad board 6 is made of a flexible rubber group material. The case 1 made of a material of hard rubber group encloses each board with electronic component mounted thereon, a battery and the flexible antenna or the like. Thus, when the portable electronic equipment is put in a rear pocket of a pair of trousers, since the case 1 and each board are made of rubber group materials, the equipment is deformed along the body form.



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